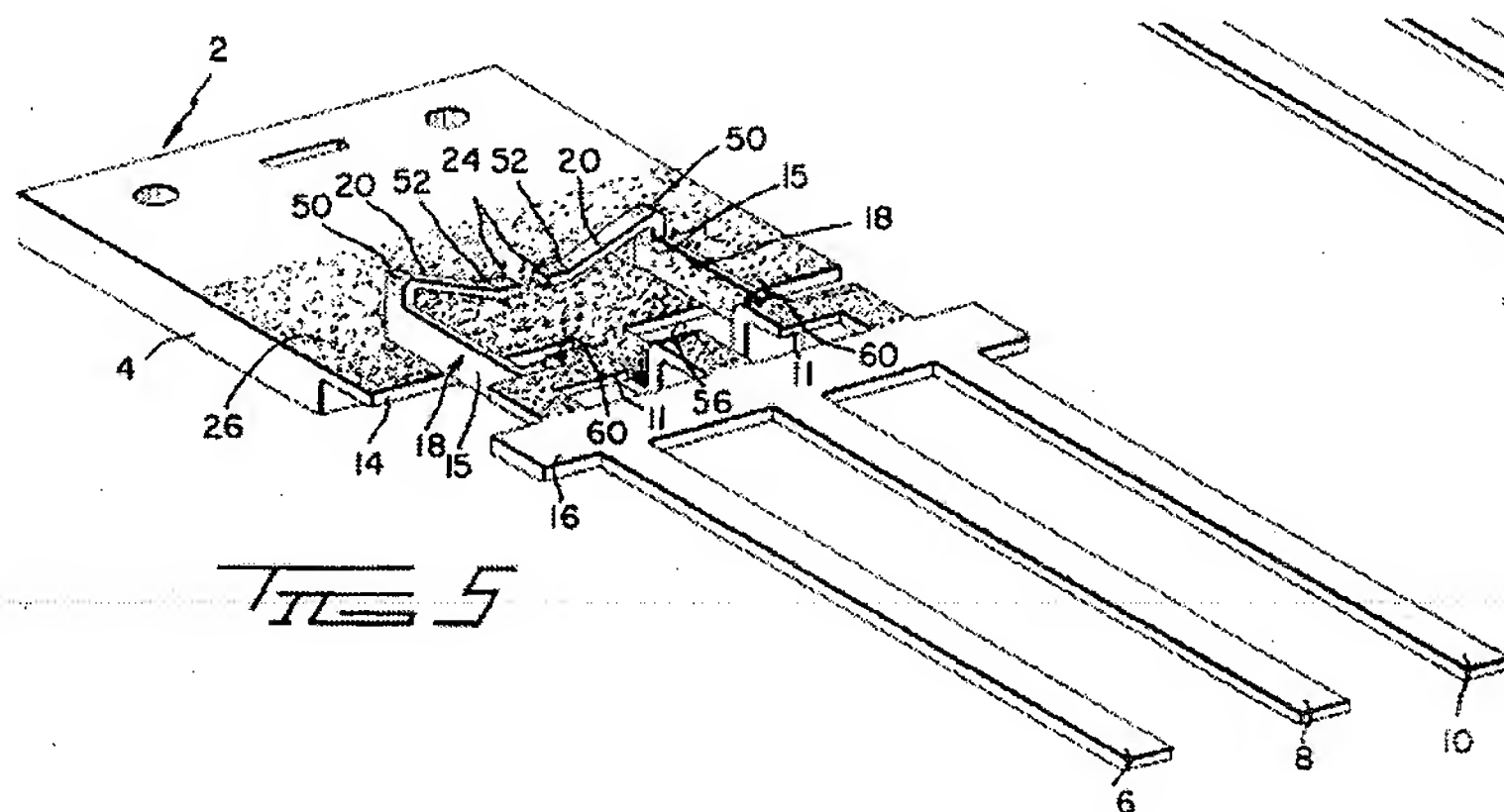


Remarks

The Office Action dated December 29, 2008 reopened prosecution with the following new grounds of rejection: claims 3-4, 9-10 and 12 stand rejected under 35 U.S.C. § 112(1); claims 1-2 stand rejected under 35 U.S.C. § 102(b) over Heinlen (U.S. Patent No. 3,736,367); claims 3-7, 9-13 and 15 stand rejected under 35 U.S.C. § 102(b) over Coldren (U.S. Patent No. 4,252,864); and claims 8 and 14 stand rejected under 35 U.S.C. § 103(a) over the '864 reference in view of Sakamoto (U.S. Patent No. 6,975,022). The Office Action also notes an objection to the drawings. Applicant traverses all of the rejections and, unless explicitly stated by the Applicant, does not acquiesce to any objection, rejection or averment made in the Office Action.

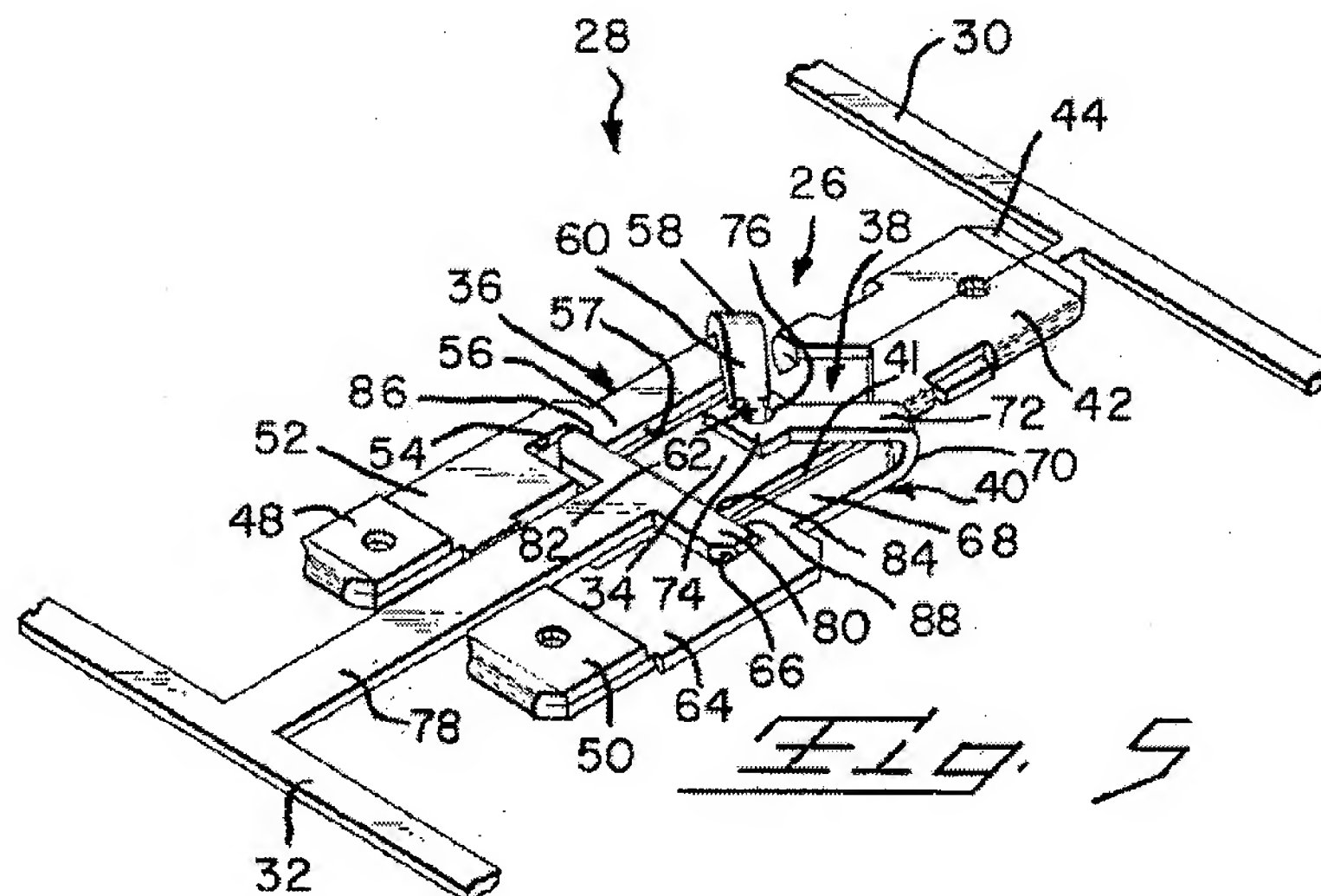
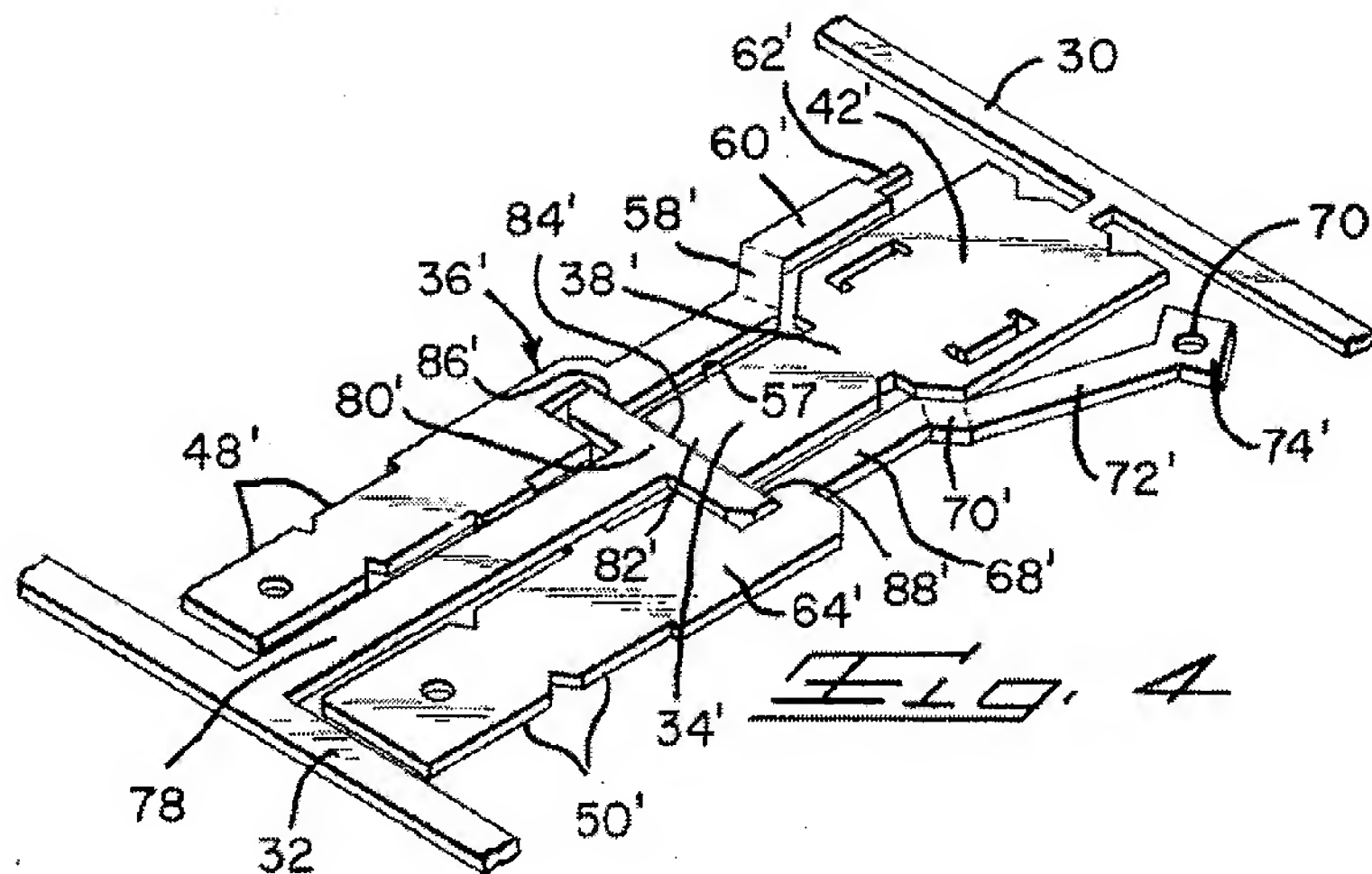
The § 102(b) rejections over the '367 reference are improper because the reference does not disclose, and the Office Action has not asserted, the claimed first and second conductors that secure and electrically connect a semiconductor element on opposite sides thereof, nor does the '367 reference disclose connectors that secure a semiconductor element via secure bending (as established in the record). Referring to Figure 5 of the '367 reference (copied below for convenience), the asserted "first (6, 18, 24)" and "second (10, 18, 24) connection conductor" are not respectively located on opposite sides of any semiconductor element and are not configured to do so. Rather, the cited contact arms bend to secure an upper portion of a semiconductor chip (*i.e.*, arms 20 extend over and connect to a common (upper) side of a chip, as shown in Figure 5 below). Furthermore, the underside of the chip is located upon a heat sink 26, which does not make electrical contact as claimed, as is consistent with the discussion at column 2:55-65.



Accordingly, the cited portions of the '367 reference do not disclose a lead frame or any arrangement that makes electrical contact to opposite sides of a semiconductor element. As also established in the record, the '367 reference does not disclose connection conductors bent at oblique angles. Accordingly, Applicant believes that the § 102(b) rejections over the '367 reference are improper and should be removed.

Further regarding the § 102(b) rejections of claims 1 and 2, Applicant submits that the Office Action's failure to give patentable weight to limitations following the terms "adapted to" is contrary to the M.P.E.P. and the case law cited in the Office Action (*In re Hutchinson*). In this instance, *In re Hutchinson* is distinguishable because "adapted to" was part of an intended use clause found in the preamble of the claim. Other cases support the view that "adapted to" clauses in claims further limit the claimed subject matter and should not be disregarded. *See, e.g., In re Venezia*, 530 F.2d 956, 958-59 (CCPA 1976), *Pac-Tec Inc. v. Amerace Corp.*, 903 F.2d 796, 801 (Fed. Cir. 1990). Notwithstanding this, Applicant believes that further discussion of the terms "adapted to" is unnecessary as the terms are no longer present in the claims.

The § 102(b) rejections of claims 3-7, 9, 10-13 and 15 over the '864 reference are improper because the Office Action has provided no explanation whatsoever as to correspondence between the cited disclosure and specific claim limitations, and Applicant cannot ascertain any such correspondence. For instance, the Office Action cites all of figures 1-5 and the entirety of column 4 of the '864 reference, but provides no explanation as to which of the multiple portions of the assemblies shown in the figures would correspond to specific claim limitations. Applicant has reviewed these cited portions and cannot ascertain any disclosure of first and second non-engaging end portions that electrically connect to opposite sides of a semiconductor element. Referring to Figures 4 and 5 by way of example, it appears that the lower supporting region 34 is a central portion of the lead frame that is engaged to carrier strips 30 and 32 at opposing ends.



In addition, while the end portions 62 and 74 are not engaged, they both connect to the same side of a chip (see, e.g., Figure 5 above, showing end portion 62 extending into an opening 70 in end portion 74). Accordingly, the lower support structure 34 is engaged at both ends, and the cited portions of the '864 reference do not provide correspondence to the claims as asserted. The cited portions of the '864 reference also fail to provide correspondence to other claim limitations, such as those in claim 5 (and relative to claim 13) directed to specific limitations characterizing the bends of the connection conductors (respective portions bent at 90 degrees along an out-of-plane bending axis, with an end of the conductor corresponding to the thickness of a semiconductor element again bent

through 90 degrees). For further explanation as to the lack of correspondence to these and other dependent limitations, Applicant refers the Examiner to Applicant's prior responses of record (as largely unaddressed in the instant Office Action), which are fully incorporated herein. Applicant therefore requests that the § 102(b) rejections of claims 3-7, 9, 10-13 and 15 be removed.

The § 103(a) rejection of claims 8 and 14 over the '864 reference in view of the '022 reference are also improper for reasons stated above, and further because the cited references fail to provide correspondence to claims 8 and 14 as asserted. As the Office Action has (again) cited to multiple figures and discussion without providing a clear explanation as to which portions of the references discuss limitations (*i.e.*, those directed to a hole and to a pusher member), Applicant has reviewed the references but cannot ascertain (operable) disclosure of various claim limitations. For instance, the cited portions of columns 8 and 9 of the '022 reference do not appear to discuss any pusher member or moving any semiconductor element. Rather, it appears that the '022 reference holds member 30 in place by vacuum suction and secures that member without moving it (*see, e.g.*, column 9:15-21). Accordingly, neither reference discloses moving a semiconductor element with a pusher member as claimed.

In addition to the above, the § 103(a) rejection of claims 8 and 14 are also improper because the '022 reference teaches away from moving a semiconductor element in order to fix member 30. As consistent with M.P.E.P. § 2143.01 and relevant case law, where a reference teaches away from the asserted combination of teachings, and where the proposed modification further undermines the purpose or operation of the reference, there is no motivation to combine the references as asserted. *See, e.g., KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (U.S. 2007) ("when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be non-obvious"), and *In re Gordon* 733 F.2d 900 (Fed. Cir. 1984) (A §103 rejection cannot be maintained when the asserted modification undermines purpose of the reference). As the '022 reference teaches fixing member 30 in place, moving the member as suggested in the Office Action directly contradicts the purpose and teachings of the '022 reference. Therefore, the proposed combination of the '864 and '022 references does not provide correspondence to the limitations in claims 8 and 14,

there is no motivation to combine the references as asserted, and the references further suggest that the claimed invention is non-obvious. Accordingly, the § 103(a) rejection is improper and should be removed.

The §§ 112(1) and 112(2) rejections of claims 3, 4, 9, 10 and 12, based upon use of the term “means,” are improper because the specification provides various examples to which the respective limitations may be applicable. For instance, regarding the term “pusher means,” the specification provides explicit examples in the figures, with exemplary embodiments described at paragraphs 0018 and 0050, the latter of which describing a “pusher member” (*e.g.*, a “leaf spring”). Regarding the term “pressure means,” the specification also provides various examples, with exemplary embodiments described at paragraphs 0019 (functionally describing example pressure means) and 0047-0052 (*e.g.*, pressure members 7 and 8). The term “positioning means” is supported in the figures (*e.g.*, portions of the frame upon which a semiconductor element is positioned) and various portions of the specification including, for example, paragraph 0041 (*e.g.*, “end portion 4A” and/or “(vacuum) tweezers”). Regarding the term “connection means,” the specification and figures again provide multiple exemplary embodiments, including those shown in Figure 1 and described at paragraphs 0041-0043 (*e.g.*, “connection conductors 4, 5”). Accordingly, the §§ 112(1) and 112(2) rejections are without basis and should be removed.

Regarding the objection to the drawings, Applicant has submitted replacement drawings herewith. Accordingly, Applicant believes that the objection is no longer applicable.

Applicant notes that claim 16 does not stand rejected in any statement of rejection. However, the Office Action discusses claim 16 in connection with the § 102(b) rejection of claims 3-7, 9-13 and 15 at page 12. While Applicant believes claim 16 to be allowable in view of the above, should any rejection of claim 16 be maintained, Applicant requests clarification and further requests that Applicant be afforded the opportunity to respond to any such rejection (as would be made in a non-final Office Action).

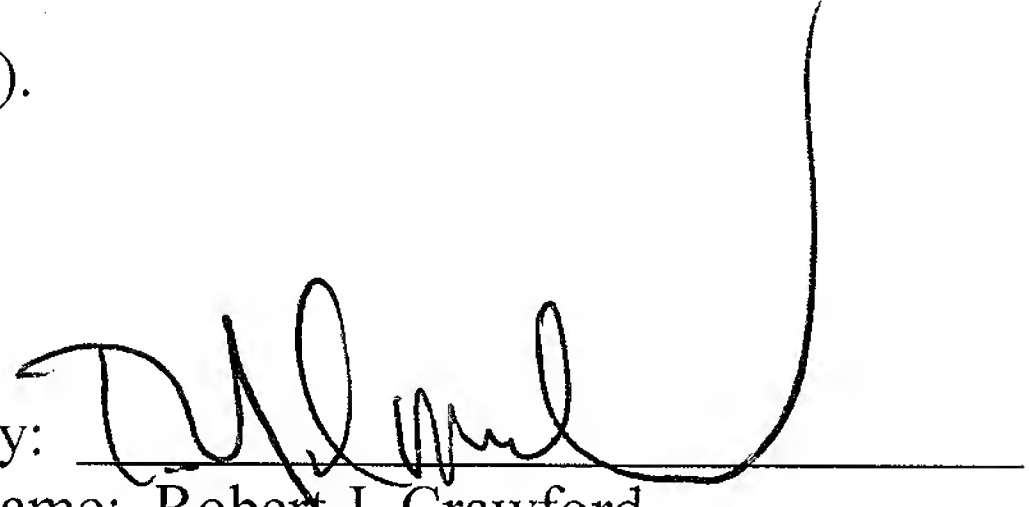
Applicant notes that various stylistic amendments have been made to the claims, and believes that these amendments neither are required for patentability over any cited reference nor change the scope of the claims. For instance, the widely-used term “adapted” has been change to “configured” and the term “freely-extending” has been used to assist the Examiner relative to limitations relating to the term “non-engaging.”

In view of the above, Applicant believes that each of the rejections has been overcome and the application is in condition for allowance. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is asked to contact the agent overseeing the application file, Peter Zawilski, of NXP Corporation at (408) 474-9063 (or the undersigned).

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Attachment: Replacement Drawings (Figures 7-9)